



INTEGRATED PIPELINE PROJECT

MONTHLY EXECUTIVE SUMMARY

June 2019

S1X10 Aerial view of pressure reduction station



IPL PROGRAM MANAGEMENT

Tarrant Regional Water District

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TARRANT REGIONAL WATER DISTRICT (TRWD) and the CITY OF DALLAS

WATER UTILITIES (DWU) have partnered to finance, plan, design, construct and operate the Integrated Pipeline (IPL) Project. The IPL Project is an integrated water delivery transmission system connecting Lake Palestine to Lake Benbrook with connections to Cedar Creek and Richland-Chambers Reservoirs integrating TRWD's existing pipelines and creating flexibility in delivery as well as quick response to fluctuating customer water demands. The IPL Project consists of 150 miles of pipeline, three new lake pump stations, and three new booster pump stations delivering a required capacity of 350 million gallons per day (MGD) of raw water to North Central Texas. TRWD and DWU currently serve over 4.1 million residents and the IPL will allow these agencies to continue supporting regional community and economic growth.

PROGRAM SUPPORT SERVICES

as of 06.30.19

CONTRACT DESIGN AND CONSTRUCTION	DESCRIPTION	BUDGET	CONTRACTS ISSUED	TOTAL INVOICED
PROGRAM WIDE PROFESSIONAL SERVICES		\$133,062,000	\$88,687,926	\$85,039,642
Program Management	Overall program management services for implementation of the IPL Project. (Extension of TRWD staff)	\$45,000,000	\$35,124,711	\$35,124,711
Conceptual Design / Environmental / Permitting	Operations plan & Prepare 404 permit application, Envision Application Completion	\$13,551,000	\$13,194,525	\$13,248,699
Value Engineering	Expert review of design	\$640,000	\$472,248	\$472,248
Surveying and Mapping	Control, property survey, legal descriptions, and Provide SUE Level A Survey, GIS	\$14,600,000	\$11,854,388	\$10,603,582
Geotechnical	Initial Characterization of entire IPL Project	\$12,037,000	\$12,336,425	\$12,195,421
Corrosion Engineering Services	Engineering Corrosion Control	\$3,891,000	\$5,326,362	\$4,286,893
Land, Easement Acquisition, & Support Studies	Right of Entry and Land Acquisition Support Services	\$33,993,000	\$3,464,526	\$3,429,501
SCADA System	Engineering of SCADA system	\$640,000	\$1,508,213	\$622,393
Microwave System	Engineering of Communications System	\$5,210,000	\$1,522,785	\$1,468,609
DESIGN		\$152,837,000	\$133,869,306	\$122,820,378
Completed		\$101,901,000	\$97,470,103	\$98,483,472
Active		\$24,158,000	\$35,860,787	\$24,336,907
CH2M Hill	Project Operational Information and Operations Manual		\$6,479,844	\$4,271,031
CH2M Hill	Final Conformance of Design of JCC1	\$728,000	\$3,377,790	\$3,123,474
MWH	Final Conformance of Design of Section 9/10/11	\$506,000	\$812,562	\$555,735
Black & Veatch	Final Design of Section 12/13/14 - 28.1 miles of 84 - inch and 108 - inch pipeline	\$11,292,000	\$9,712,410	\$9,700,648
Parsons	Final Conformance of Design of Sections 17/18/Tunnel	\$832,000	\$579,379	\$681,545
Brown & Gay	Final Design of Section 19-1	\$5,770,000	\$7,003,722	\$1,957,619
HDR	Final Design of Section 19-2	\$5,030,000	\$6,989,876	\$3,180,212
Burns & McDonnell Trans. Mgmt.	Development of Transportation Management Plan		\$905,203	\$866,643
Remaining		\$26,778,000	\$538,417	
CONSTRUCTION ADMINISTRATION		\$48,877,000	\$18,550,960	\$13,078,975
CONSTRUCTION / OWNER FURNISHED EQUIPMENT		\$1,729,540,000	\$713,721,120	\$625,176,578
Completed		\$26,677,000	\$20,634,788	\$20,418,083
Active		\$875,818,000	\$693,086,333	\$604,758,495
Pipeline Section 15-1		\$115,112,000	\$93,687,256	\$93,687,256
Garney Construction	Construction of Section 15-1	\$115,112,000	\$93,687,256	\$93,687,256
JB3		\$83,013,000	\$75,703,181	\$70,820,004
MWH Constructors	Construction of JB3 Pump Station	\$51,473,000	\$57,962,028	\$56,402,781
Oncor Electric	Installation of JB3 Substation Transmission Lines	\$1,066,000	\$957,119	\$923,119
Isolux Corsan	Construction of JB3 Substation	\$7,400,000	\$4,864,888	\$4,864,888
R E Monks	Construction of JB3R Restoration	\$0	\$633,263	\$633,263
Pentair Flow Technologies	Construction of JB3 Pumps, Motors, Drives	\$23,074,000	\$11,285,883	\$7,995,953
Pipeline Section 12/13/MBR/IB4 Bypass		\$167,992,000	\$153,924,053	\$153,532,318
Thalle Midlothian	Construction of Sections 12/13/MBR/IB4 Bypass	\$146,310,000	\$143,614,761	\$143,230,542
BAR Constructors	Construction of Richland-Chambers/Cedar Creek Interconnection Facility	\$21,682,000	\$10,185,063	\$10,177,546
Hilco Electric	Relocation of Electrical Service Lines		\$0	\$0
Hilco Electric	MBR Radio Tower Power		\$33,312	\$33,312
Oncor Electric	Provide Power to IPL 2X12		\$90,918	\$90,918

PROGRAM SUPPORT SERVICES

as of 06.30.19

CONTRACT DESIGN AND CONSTRUCTION	DESCRIPTION	BUDGET	CONTRACTS ISSUED	TOTAL INVOICED
Pipeline Section 15-2		\$97,217,000	\$50,743,593	\$50,743,593
BAR Constructors	Construction of Section 15-2	\$97,217,000	\$50,743,593	\$50,743,593
Pipeline Section 14		\$107,113,000	\$47,130,639	\$47,130,639
Garney Construction	Construction of Section 14	\$107,113,000	\$47,080,639	\$47,080,639
Magellan	Captioned Crossing Inspection Section 14	\$0	\$50,000	\$50,000
Pipeline Section 17		\$109,944,000	\$94,280,216	\$69,783,914
IPL Partners	Construction of Section 17 Tunnel	\$12,252,000	\$48,500,000	\$28,187,623
Thalle Midlothian	Construction of Sections 17/18/IB2 Bypass	\$97,692,000	\$45,780,216	\$41,596,291
JCC1		\$106,582,000	\$105,572,358	\$50,020,436
BAR Constructors	Construction of JCC1 Intake	\$21,564,000	\$18,960,214	\$18,960,214
BAR Constructors	Intake Facility & OFE Installation Package 2	\$63,900,000	\$63,336,179	\$17,219,770
Ebara	Construction of JCC1 Pumps, Motors, Drives	\$17,775,000	\$12,694,890	\$3,832,089
Lambda Construction	High Voltage		\$5,824,825	\$5,252,112
Oncor Electric	Construction of JCC1 HV Transmission Lines	\$3,343,000	\$4,756,250	\$4,756,250
Pipeline Section 10/11		\$73,679,000	\$57,738,743	\$55,877,007
IPL Partners	Construction of Section 10/11	\$72,362,000	\$43,815,594	\$41,555,700
Oncor Electric	Construction of KBR S1X10 HV Transmission Lines		\$17,452	\$17,452
BAR Constructors	Construction of KBR S1X10	\$1,317,000	\$13,905,696	\$14,303,854
Valve Packages		\$15,166,000	\$14,306,294	\$13,163,328
Garney Construction	Valve Package 1 - Section 15-1 Butterfly Valves	\$518,000	\$0	\$0
Rodney Hunt	Valve Package 2 - Section 15-1 Interconnection Facility Valves	\$474,000	\$733,206	\$733,206
Blackhall Engineering	Valve Package 3 - JB3, Section 15-2, MBR Yard Gate Valves	\$5,500,000	\$6,278,388	\$6,211,694
Crispin Valves	Valve Package 4 - Section 12 RC/CC Interconnection, JB4 Bypass, MBR Yard Butterfly Valves	\$3,999,000	\$2,269,140	\$2,187,448
Crispin Valves	Valve Package 5 - JB3 Butterfly Valves	\$1,249,000	\$1,249,222	\$1,039,098
Ross Valves	Valve Package 6 - Section 12 RC/CC Interconnection Multi-Orifice Valves	\$715,000	\$526,340	\$478,838
Crispin Valves	Valve Package 8 - Section 10 & 11 Bypass Butterfly Valves	\$1,391,000	\$1,461,040	\$1,325,916
Blackhall Engineering	Valve Package 11 - JCC1 Gate Valve	\$1,320,000	\$1,788,958	\$1,187,128
Remaining		\$827,045,000		
CONSTRUCTION MANAGEMENT		\$65,170,000	\$51,849,779	\$42,366,277
Completed		\$15,777,000	\$15,687,599	\$18,818,693
Active		\$17,665,000	\$36,162,180	\$23,547,584
Remaining		\$31,728,000		
CONSTRUCTION MATERIALS TESTING		\$17,296,000	\$13,070,553	\$8,732,244
Completed		\$203,000	\$225,133	\$225,132
Active		\$7,791,000	\$12,845,420	\$8,507,112
Remaining		\$9,302,000		
ROCI		\$2,575,000	\$31,847,084	\$21,907,285
LAND COST		\$107,384,000	\$72,119,677	\$72,119,677
PROGRAM LEVEL CONTINGENCY		\$83,178,000		
MISCELLANEOUS		\$2,000,000	\$4,681,777	\$4,681,777
GRAND TOTAL		\$2,341,919,000	\$1,128,398,184	\$995,922,836
REMAINING BOND FUNDS				\$254,077,164

Note: Total Bonds issued to date \$1,250,000,000

ACCOMPLISHMENTS

through 06.30.19

IPL PROGRAM GENERAL OPERATIONAL STATUS

The IPL system will resume delivering raw water to TRWD customers in August.

PL12, 13, MBR (Pipeline Sections 12 and 13 combined with the Midlothian Balancing Reservoir)

- Project is Substantially Complete and in operation.

JB3 (250mgd Pump Station expandable to 350mgd)

- Project achieved Substantial Completion on April 15, 2019.
- Completing final punchlist work.

PL14 (Pipeline Section 14 that delivers water from JB3 Pump Station to MBR)

- Project is Substantially Complete. Final Completion is expected later this summer pending revegetation of the ROW.

PL17TUN (Trinity River Tunnel on Pipeline Section 17)

- Completed excavation of launch shaft, and tail tunnel.
- Casting concrete tunnel liner segments.
- Set Tunnel Bore Machine (TBM) in place to begin tunneling.

JCC1IN (Intake Structure and Wet Well for JCC1 Pump Station at Cedar Creek)

- Project achieved Final Completion on April 28, 2019.

JCC1HV (High Voltage Substation for the JCC1 Pump Station at Cedar Creek)

- Project is Substantially Complete and Oncor is progressing with work on switching station for permanent pump station power.
- Contractor is performing monthly maintenance checks until substation is energized.

JCC1 (Cedar Creek Lake Pump Station)

- Began installation of structural steel columns, braces and girts.
- Placed the two slabs for Electrical Room and HVAC Slab for the pump station.
- Began installation of electrical ductbanks and manholes in pump station yard.
- Placed the slab and placed the first wall section for the Gate Valve Vault
- Placed the generator pad, brine water tank pads and HVAC equipment pads for the Chemical Building.

- Received the bridge crane, electrical generator and HVAC units for the project.
- TRWD reps witnessed UT inspection of Pump Control Valves in Germany.
- Began receiving delivery of 108" yard pipe.

PL10, 11 (Pipeline Sections 10 and 11 from the JB4 Pump Station to the KBR Pressure Reduction Facility)

- Completing cathodic protection system installation and protective coatings of pipeline appurtenances.
- Continue final ROW restoration and seeding.

PL17-18 (Pipeline Sections 17 and 18 from east end of PL15-1 to JCC1 Pump Station)

- Completing cathodic protection system installation, fence and gate installation, and cable mat stream crossing.
- Seeding ROW.

KBRPRS / S1X10 (Pressure Reduction Station at Kennedale Balancing Reservoir connecting Pipeline Section 10)

- Completed functional testing of the facility and provided punchlist to contractor.
- Installing access drive, parking areas, sidewalks, fences and gates.
- Working on final site grading and seeding.

OFE07 (Owner-Furnished pumps, motors and variable frequency drives for JB3)

- Manufacturer is in the process of replacing pump/motor couplings.

OFE09 (Owner Furnished pumps, motors and variable frequency drives for JCC1)

- OPT reps witnessed successful pump performance testing of all units.
- Units are being shipped for delivery.

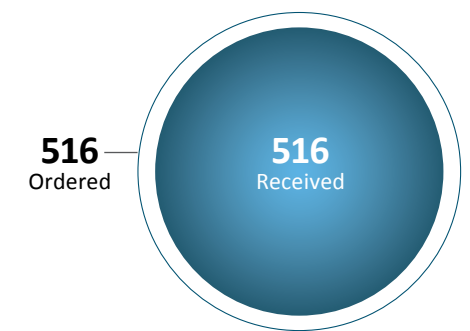
OFE11 (Owner-Furnished 108" Gate Valve)

- Gate valve is being shop-assembled for testing.

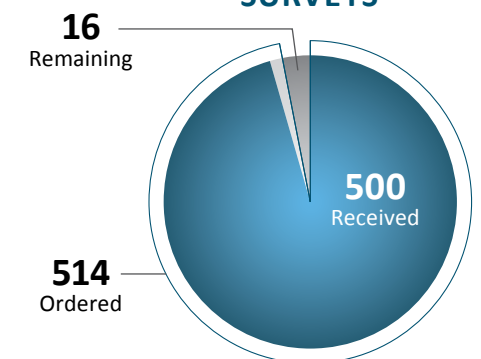
ACTIVITY STATUS

through 07.11.19

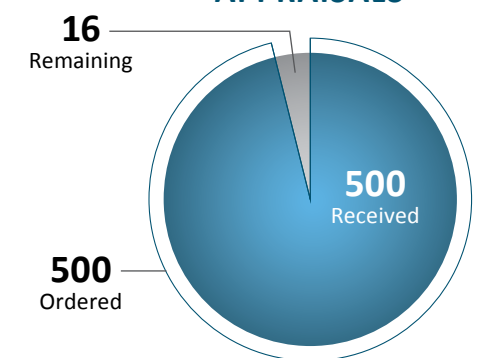
TITLE COMMITMENTS



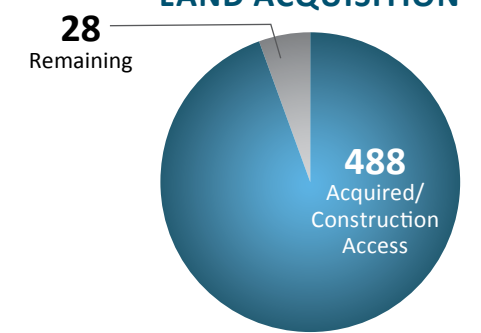
SURVEYS



APPRAISALS



LAND ACQUISITION



Total Parent Parcels: 516



PL17TUN Casting concrete tunnel liner segment



JCC1 Concrete placement for pump sole plate



PL17TUN Cutter head of Tunnel Bore Machine set in access shaft

PROJECT SCHEDULE

PROJECT COMPONENTS	2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SECTIONS 12, 13, MBR CONSTRUCTION	SUBSTANTIALLY COMPLETE AND OPERATIONAL											
JB3 CONSTRUCTION	SUBSTANTIALLY COMPLETE AND OPERATIONAL											
SECTION 14 CONSTRUCTION	SUBSTANTIALLY COMPLETE AND OPERATIONAL											
SECTION 17 TUNNEL CONSTRUCTION	[Progress bar]											
JCC1 PUMP STATION INTAKE WET WELL CONSTRUCTION	SUBSTANTIALLY COMPLETE											
SECTION 10, 11 CONSTRUCTION	[Progress bar]											
SECTION 17, 18 CONSTRUCTION	[Progress bar]											
KBRPRS/S1X10 (PRESSURE REDUCTION STA.) CONSTRUCTION	[Progress bar]											
JCC1 HIGH VOLTAGE SUBSTATION CONSTRUCTION	SUBSTANTIALLY COMPLETE											
JCC1 CONSTRUCTION	[Progress bar]											

M/WBE PARTICIPATION

as of 06.30.19

CONTRACT DESIGN AND CONSTRUCTION	M/WBE & HUB SUB-CONTRACTORS	CONTRACT COMMITMENT		M/WBE HUB INVOICED TO DATE		TOTAL PROJECT COMPLETED TO DATE	
		\$	%	\$	% (PER COMMITMENT)	\$	%
PROGRAM WIDE PROFESSIONAL SERVICES		\$20,122,412	23%	\$20,027,873	100%	\$85,039,642	96%
Program Management		\$6,636,687	19%	\$6,636,687	100%	\$35,124,711	100%
Conceptual Design / Environmental / Permitting		\$2,644,586	20%	\$2,827,564	107%	\$13,248,699	100%
Value Engineering		\$23,178	5%	\$23,178	100%	\$472,248	100%
Surveying and Mapping		\$3,939,403	33%	\$3,863,616	98%	\$10,603,582	89%
Geotechnical		\$3,638,078	29%	\$3,545,033	97%	\$12,195,421	99%
Corrosion Engineering Services		\$1,053,764	20%	\$761,434	72%	\$4,286,893	80%
Land, Easement Acquisition, & Support		\$1,294,837	37%	\$1,835,058	142%	\$3,429,501	99%
Studies		\$41,717	1%	\$41,717	100%	\$3,587,584	92%
SCADA System		\$384,444	25%	\$43,932	11%	\$622,393	41%
Microwave System		\$465,719	31%	\$449,653	97%	\$1,468,609	96%
DESIGN		\$35,085,309	26%	\$33,042,481	94%	\$122,820,378	92%
Completed		\$26,558,396	27%	\$27,127,232	102%	\$98,483,472	101%
Active		\$8,526,913	24%	\$5,915,249	69%	\$24,336,907	68%
CH2M Hill (Ops Manual)	NDM	\$1,063,611	16%	\$674,748	63%	\$4,271,031	66%
CH2M Hill (JCC1)	JQ, Gupta, APM, HVJ, XENCO	\$1,005,323	30%	\$1,165,809	116%	\$3,123,474	92%
MWH	Garzabury, Kevin Sloan	\$226,705	28%	\$136,372	60%	\$555,735	68%
Black & Veatch	BDS, CAS, JQ, TME	\$2,425,530	25%	\$2,583,711	107%	\$9,700,648	100%
Parsons	Criado, EPB, HVJ	\$144,845	25%	\$112,357	78%	\$681,545	118%
Brown & Gay	AZB, TME, Lamb-Star, NDM	\$1,750,930	25%	\$481,253	27%	\$1,957,619	28%
HDR	AZB, Daltech, Word Wizards, Gupta	\$1,747,469	25%	\$639,501	37%	\$3,180,212	45%
Burns & McDonnell Trans. Mgmt.	Lamb-Star Engineering	\$162,500	18%	\$121,498	75%	\$866,643	96%
Remaining		\$0	0%	\$0	0	\$0	0%
CONSTRUCTION ADMINISTRATION		\$4,533,900	24%	\$2,938,950	65%	\$13,078,975	71%
CONSTRUCTION / OWNER FURNISHED EQUIPMENT		\$86,215,192	12%	\$131,168,514	152%	\$625,176,578	88%
Completed		\$4,252,128	22%	\$4,091,050	96%	\$20,418,083	99%
Active		\$81,963,064	19%	\$127,077,464	155%	\$604,758,495	87%
Pipeline Section 15-1		\$9,317,301	29%	\$6,649,736	71%	\$93,687,256	100%
Garney Construction	Danridge, SYB, Ricochet, Glenko, Carrasco, Cowboy, Gorrondona, Custom Fence, LKT, Astro Johnny, Pam, Father & Son, Bowden's Erosion	\$9,317,301	29%	\$6,649,736	71%	\$93,687,256	100%
JB3		\$15,251,716	26%	\$12,790,534	84%	\$70,820,004	94%
MWH Constructors	Statewide, Cowboy, TX Enviro, Champion, Ram Tool, Rent-a-Fence, Soto Steel, A-Star, Ike, Greystone, LKT, Accurate, Green Scaping	\$13,801,796	27%	\$11,340,614	82%	\$56,402,781	97%
Oncor Electric		\$1,449,920	3%	\$1,449,920	100%	\$4,864,888	8%
Isolux Corsan	Dyna Grid	\$0	0%	\$0	0%	\$923,119	96%
RE Monks		\$0	0%	\$0	0%	\$633,263	13%
Pentair Flow Technologies		\$0	0%	\$0	0%	\$7,995,953	71%
Pipeline Section 12/13/MBR/JB4 Bypass		\$22,074,476	24%	\$22,270,125	101%	\$153,532,318	100%
Thalle Midlothian	LKT, Statewide, Granados, Desert Steel, ETTL, Glenko, A.N.A., Edwards, Buzz, Bradley-Douglas, Pinnacle	\$21,260,756	27%	\$16,449,587	77%	\$143,230,542	100%
BAR Constructors	Fraire's, DFW Aggregates, Ricochet, MMG, LKT, Brock, Garland Heating & Air, Texas Metal, Buzz, Rangel	\$813,719	8%	\$5,820,538	715%	\$10,177,546	100%

M/WBE PARTICIPATION

as of 06.30.19

CONTRACT DESIGN AND CONSTRUCTION	M/WBE & HUB SUB-CONTRACTORS	CONTRACT COMMITMENT		M/WBE HUB INVOICED TO DATE		TOTAL PROJECT COMPLETED TO DATE	
		\$	%	\$	% (PER COMMITMENT)	\$	%
Hilco Electric		\$0	0%	\$0	0%	\$0	0%
Hilco Electric		\$0	0%	\$0	0%	\$33,312	100%
Oncor Electric		\$0	0%	\$0	0%	\$90,918	100%
Pipeline Section 15-2		\$3,947,329	16%	\$20,981,334	532%	\$50,743,593	100%
BAR Constructors	Ricochet, Fraire's, DFW Aggregates, Brock, Tidy Toilets, KDAT, Juan Cantu, Buyer's, RAM, Rangel, LKT, Greenscaping, Environmental Safety	\$3,947,329	16%	\$20,981,334	532%	\$50,743,593	100%
Pipeline Section 14		\$5,925,447	22%	\$6,957,922	117%	\$47,130,639	100%
Garney Construction	AEA, Gorrondona, JC Welding, LKT, Statewide, Bowdens	\$5,925,447	29%	\$6,957,922	117%	\$47,080,639	100%
Magellan	Captioned Crossing Inspection Section 14	\$0	0%	\$0	0%	\$50,000	100%
Pipeline Section 17		\$15,151,701	23%	\$4,162,082	27%	\$69,783,914	74%
IPL Partners	LKT, Industry Junction, Eagle Aggregate, Suncoast Res, ATS Drilling, RECS, ANA, Alliance, Ram, JC Welding, Luis Moreno	\$9,736,346	23%	\$1,920,218	20%	\$28,187,623	58%
Thalle Midlothian	Fleet Lube, Rambo Controls, AE Trucking, MKI Construction, Stome Water Management, Industry Junction, Ortega Land Clearing	\$5,415,356	24%	\$2,241,864	41%	\$41,596,291	91%
JCC1		\$3,088,051	3%	\$36,115,903	1170%	\$50,020,436	47%
BAR Constructors	Industry Junction, K&A Steel, Ricochet Fuel, Ricochet Fuel, Tidy Toilets, Buzz Custom Fence	\$961,990	6%	\$18,008,980	1872%	\$18,960,214	100%
BAR Constructors	Industry Junction, K&A Steel, Ricochet Fuel, Ricochet Fuel, Tidy Toilets	\$0	0%	\$17,219,770	0%	\$17,219,770	27%
Ebara		\$0	0%	\$0	0%	\$3,832,089	66%
Lambda Construction	High Voltage	\$2,126,061	37%	\$887,152	42%	\$5,252,112	90%
Oncor Electric		\$0	0%	\$0	0%	\$4,756,250	100%
Pipeline Section 10/11		\$7,207,043	20%	\$17,149,828	238%	\$55,877,007	97%
IPL Partners	LKT, Industry Junction, Eagle Aggregate, Suncoast Res, ATS Drilling, RECS, ANA, Alliance, Ram, JC Welding, Luis Moreno	\$5,761,202	24%	\$2,845,974	49%	\$41,555,700	95%
Oncor Electric		\$0	0%	\$0	0%	\$17,452	100%
BAR Constructors	Industry Junction, VSG Trucking, Ricochet, MMG Disposal, Garland HVAC, CMC Rebar, Buzz Custom Fence, K&A Steel, Rangle Land Surveying	\$1,445,841	11%	\$14,303,854	989%	\$14,303,854	103%
Valve Packages		\$0	0%	\$0	0%	\$13,163,328	92%
CONSTRUCTION MANAGEMENT		\$19,155,809	37%	\$16,559,337	86%	\$42,366,277	82%
Completed		\$5,928,803	38%	\$6,396,693	108%	\$18,818,693	120%
Active		\$13,227,006	37%	\$10,162,644	77%	\$23,547,584	65%
CONSTRUCTION MATERIALS TESTING		\$7,283,832	56%	\$5,017,622	69%	\$8,732,244	67%
Completed		\$219,036	97%	\$219,036	100%	\$225,132	100%
Active		\$7,064,796	55%	\$4,798,586	68%	\$8,507,112	66%
ROCIP		\$900,661	3%	\$370,813	41%	\$21,907,285	69%
TOTAL		\$173,297,115	22%	\$209,125,590	121%	\$919,121,381	87%
LAND COST		\$0	0%	\$61,892	0%	\$72,119,677	226%
MISCELLANEOUS		\$0	0%	\$0	0%	\$4,681,777	6%
GRAND TOTAL		\$173,297,115	22%*	\$209,187,482	121%	\$995,922,836	88%
		M/WBE/HUB Invoiced				\$209,187,482	
		Grand Total Invoiced				\$995,922,836	
		* Exclusions Invoiced				\$272,318,232	
		MWBE %				28.91%	

* Denotes participation percentage excluding cost of pipe and owner furnished equipment.

PROJECT COMPONENTS

PIPELINE SEGMENTS	CORE PROJECT	DESCRIPTION
Section 9		KBR Turn-Out Tee to existing Benbrook Connection Pipeline (10.6 mi. 84" dia. Pipe + 5 mi. 120" Tunnel)
Section 10	◆	KBR Turn-Out Tee to KBR (2.4 mi. 84" dia. Pipe)
Section 11	◆	JB4 to KBR Turn-Out Tee (10 mi. 84" dia. Pipe)
Section 12	◆	JB4 to existing CC and RC Pipelines (2.2 mi. 108" dia. Pipe)
Section 13	◆	MBR2 (Midlothian Balancing Reservoir) to JB4 (11 mi. 108" dia. Pipe)
Section 14	◆	JB3 to MBR2 (Midlothian Balancing Reservoir) (14.9 mi. 108" dia. Pipe)
Section 15	◆	JB2 to JB3 (28.5 mi 108" dia. Pipe)
Section 16		JRC1 (Joint Richland Chambers Lake Pump Station) to JB2 (12.3 mi. 96" dia. Pipe)
Section 17	◆	Cedar Creek Connection to JB2 (11.2 mi. 108" dia. Pipe)
Section 18	◆	JCC1 (Joint Cedar Creek Lake Pump Station) to Cedar Creek Connection (0.2 mi. 108" dia. Pipe)
Section 19		LP1 (Lake Palestine Pump Station) to Cedar Creek Connection (42.3 mi. 84" dia. Pipe)

PUMP STATIONS	CORE PROJECT	DESCRIPTION
Palestine Pump Station		150 mgd with new intake
Cedar Creek Pump Station	◆	277 mgd with new intake
Richland Chambers Pump Station		250 mgd Ultimate Design Capacity
Booster Pump Stations		Two @ 347 mgd and one @ 197 mgd (◆ one 347 mgd station - JB3)

SUPPORT FACILITIES	CORE PROJECT	DESCRIPTION
Reservoirs	◆	Three reservoirs (80 – 400 mgd) - two for booster pump stations and one for balancing. Two of the reservoirs are core projects – JB3R and MBR
Deep Tunnels		5 mi of 10' dia. tunnel @ Crowley (included in length of Section 9)
Substations & High Voltage Transmission Lines		Six substations and 4 mi. of high voltage transmission lines (◆ two substations)
Microwave Communications and SCADA System	◆	Provides remote operations capability and system monitoring

